

REMARKS/ARUGMENTS

Upon entry of this amendment, claims 8 and 9 will be canceled without prejudice or disclaimer of the subject matter recited therein, and claims 10-22 will be added, whereby claims 1-7 and 10-22 will be pending, Claim 1 is the sole independent claims.

Claims 10-22 are added in conformance with the claims as originally submitted in the instant application including claims canceled due to amendment to remove multiple dependent claims and the government fees associated therewith. Accordingly, the amendment does not constitute new matter.

Reconsideration and allowance of the application are respectfully requested.

Consideration Of Disclosure Statements

Applicants express appreciation for the attachment to the Office Action of initialed copies of the Forms PTO-1449 submitted with Applicants' Information Disclosure Statement, filed September 19, 2002, and Applicants' Supplemental Information Disclosure Statement, filed October 21, 2002, whereby the record reflects the Examiner's consideration of these disclosure statements.

Moreover, Applicants are submitting herewith a Second Supplemental Information Disclosure Statement. The Examiner is respectfully requested to confirm consideration of this Second Supplemental Information Disclosure Statement by initialing the Form PTO Form -1449 submitted therewith, and including an initialed copy of the form with the next communication from the Patent and Trademark Office.

Claim Of Priority

Applicants express appreciation for the acknowledgment of the claim of priority as well as receipt of the certified copy in this national stage application.

Formal Drawings

Applicants note that the Office Action indicates that the drawings filed when Applicants entered the national stage on June 25, 2002 are accepted. Applicants express appreciation for the indication of acceptance of the drawings.

Response To Rejections Based Upon Prior Art

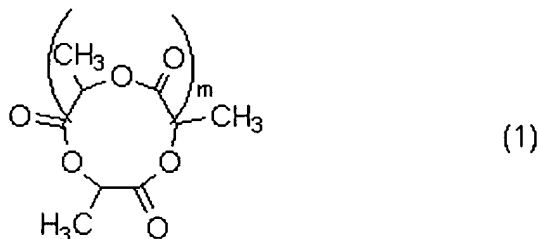
Applicants note that the following rejections are set forth in the Office Action:

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 6-306264 A in view of Macromolecules, 21, 2, 1988, pages 286-293 taken with JP 6-306264 A (apparently EP 0402676).

Claims 8 and 9 are rejected under 35 U.S.C. 102(b) as anticipated by JP 6-306264 A.

In response to these rejections, Applicants initially note that claims 8 and 9 have been canceled whereby the anticipation rejection has been rendered moot.

Regarding the obviousness rejection, Applicants note that their invention as recited in independent claim 1 is directed to a method for producing a cyclic lactic acid oligomer represented by the following formula (1):



wherein m represents an integer of 1 to 30,

wherein lactides are polymerized in the presence of an alkali metal compound represented by the following formula (2):



wherein R represents an aliphatic group, aromatic group, $-\text{Si}(\text{R}^{10})(\text{R}^{11})(\text{R}^{12})$, $-\text{CH}(\text{R}^{20})\text{CONR}^{21}\text{R}^{22}$ or $-\text{CH}(\text{R}^{30})\text{COOR}^{31}$, wherein each of R^{10} , R^{11} and R^{12} independently represents an aliphatic or aromatic group, R^{20} represents an aliphatic group, each of R^{21} and R^{22} independently represents a hydrogen atom, aliphatic group or aromatic group, R^{30} represents an aliphatic group, and R^{31} represents a hydrogen atom, aliphatic group or aromatic group;

Y represents $-\text{O}-$, $-\text{S}-$ or $-\text{NR}^{40}-$, wherein R^{40} represents a hydrogen atom, aliphatic group or aromatic group; and

Me represents an alkali metal.

Thus, amongst other features recited in Applicants' independent claim 1, the method is characterized in that lactides are polymerized in the presence of an alkali metal compound of the formula (2) of R-Y-Me, wherein Me is recited as representing an alkali metal.

In contrast to Applicants' disclosed and claimed invention, JP 06-306264 discloses a cyclic oligomer of lactic acids, but it does not teach that a cyclic oligomer of lactic acids is produced by polymerizing lactides in the presence of an alkali metal compound.

Macromolecules 1988, 21,286-293 discloses polymerization of lactide using various metal alkoxides. For example, the Examiner's attention is directed to Macromolecules Table VI I . In Table VII of Macromolecules, various metal alkoxides are disclosed, but the use of alkali metal compounds as disclosed and claimed in the present invention is not taught or suggested. Metals used in the metal alkoxides of Macromolecules include Al, Ti, Zr and Sn, which are not alkali metal. For example, the Examiner's attention is directed to Applicants' specification, at page 6, second and third lines from the bottom of the page, wherein it is disclosed that, "Examples of alkali metal include Li, Na. or K, and Li is preferable." Macromolecules merely broadly discloses at page 289, left column, middle of the last paragraph, that polymerizations of ϵ -caprolactone initiated by alkali metal alkoxides in the presence or absence of alcohols again yield ester end groups

Moreover, in Table VII of Macromolecules, the metal alkoxides appear to be examples of "Lewis acid", while the alkali metal compound in the present invention is used as "base". As mentioned above, the action of the metal alkoxide in Macromolecules is completely different from that of the alkali metal compound in the present invention. Therefore, one having ordinary skill in the art would not have been motivated to combine Macromolecules with JP 06-306264. Further, even if JP 06-306264 is combined with Macromolecules, the present invention would not be achieved since the alkali metal compound of the formula (2), i.e., R-Y-Me, is not taught or suggest by any of these documents.

Still further, EP 0 402 676 does not overcome the deficiencies of either of JP 06-306264 or Macromolecules. EP 0 402 676 discloses n-butyllithium ($n\text{-C}_4\text{H}_9\text{Li}$), lithium phenate and the like as cyclic polycarbonate polymerization catalysts. However, EP 0 402 676 relates to a method for preparing copolyestercarbonate which comprises contacting at least one cyclic polycarbonate oligomer with 'at least one cyclic polyester oligomer, and does not refer to polymerization of lactide.

Still further, the reaction of EP 0 402 676 is carried out at a temperature of about 280 to 375°C. One having ordinary skill in the art would not have been motivated to combine the disclosure of EP 0 402 676 with that of JP 06-306264 combined with Macromolecules. For the reasons set forth above, Applicants respectfully submit that the prior art of record does not teach or suggest a method for producing a cyclic lactic acid oligomer represented by the formula (1) recited in Applicants' claims, wherein lactides are polymerized in the presence of an alkali metal compound represented by the following formula (2) recited in Applicants' claims.

Still further, Applicants' dependent claims are patentable because they include the recitations of their parent claims. Moreover, one having ordinary skill in the art would not have been motivated to arrive at the further features recited in Applicants' dependent claims.

In view of the above, the rejections should be withdrawn.

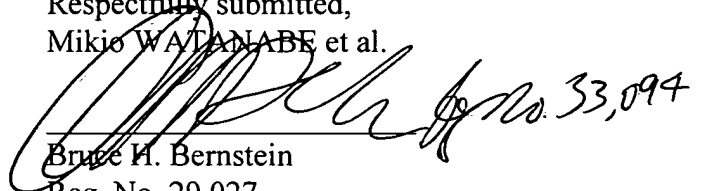
CONCLUSION

In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections of record, and allow each of the pending claims.

Applicants therefore respectfully request that an early indication of allowance of the application be indicated by the mailing of the Notices of Allowance and Allowability.

Should the Examiner have any questions regarding this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
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